# Copper Controlled Materials

## FIRST QUARTER 1982

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BUREAU OF THE CENSUS
BUREAU OF INDUSTRIAL ECONOMICS



The statistics in this publication are based on a survey of all known producers of brass mill products, copper-based powder products, and a 95 percent sample of producers of wire mill products. The figures represent total U.S. shipments of copper-base mill and foundry products.

Total shipments of copper-base mill and foundry products amounted to 1,320 million pounds in the first quarter, virtually unchanged from the fourth quarter level of 1,323 million pounds. Copper wire mill shipments, at 653 million pounds, were down 1 percent. Within this group, bare wire decreased 3 percent; insulated communication wire decreased 6 percent; and other insulated wire increased 2 percent.

A description of the survey methodology and related information appears on page 5.

Table 1. SUMMARY OF SHIPMENTS OF COPPER-BASE MILL AND FOUNDRY PRODUCTS

(Millions of pounds - metal weight)

| Quarter and year | Total | Brass mill products | | Copper wire mill products[1] | | | Brass and bronze foundry products[3] | Copper-base powder mill product |
|---|---|---|---|---|---|---|---|---|
| | | Alloyed | Unalloyed | Bare wire[2] | Insulated communication wire | Other insulated wire | | |
| 1982 | | | | | | | | |
| First quarter | 1,320 | 347 | 198 | 75 | 168 | 410 | 113 | 9 |
| 1981 | | | | | | | | |
| 1981, total | 5,987 | 1,695 | 927 | 328 | 755 | 1,764 | 471 | 47 |
| Fourth quarter | 1,323 | 350 | 194 | 77 | r179 | r403 | 109 | 11 |
| Third quarter | 1,481 | 437 | 215 | 81 | 188 | 433 | 116 | 11 |
| Second quarter | 1,592 | 462 | 254 | 88 | 192 | 458 | 125 | 13 |
| First quarter | 1,591 | 446 | 264 | 82 | 196 | 470 | 121 | 12 |
| 1980, total | 5,786 | 1,508 | 959 | 293 | 797 | 1,693 | 489 | 47 |
| 1979, total | 6,707 | 1,869 | 1,107 | 236 | 846 | 1,966 | 617 | 66 |
| 1978, total | 6,266 | 1,750 | 962 | 238 | 806 | 1,867 | 580 | 63 |

Note: Detail may not add to totals due to independent rounding.

rRevised.

[1]Represents copper content weight, rather than metal weight.
[2]Represents uninsulated, bare tinned, and/or alloy coated wire.
[3]Source: Bureau of the Census Current Industrial Reports Series M33E, Nonferrous Castings.

Address inquiries concerning these figures to the U.S. Department of Commerce, Bureau of Industrial Economics, Washington, D.C. 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Jim Oliver, (301) 763-5440.

For sale by Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233, or any U.S. Department of Commerce district office. Postage stamps not acceptable; currency submitted at sender's risk. Remittances from foreign countries must be by international money order or by a draft on a U.S. bank. Price, 25 cents per copy, $1.25 per year.

Tehle 2. SHIPMENTS OF COPPER-BASE MILL AND FOUNDRY PRODUCTS

(Millione of pounds - metel weight)

| Product | 1982 first quarter | 1981 | |
|---|---|---|---|
| | | Fourth qusrter | First quarter |
| Totsl shipments | 1,320 | 1,323 | 1,591 |
| Copper-base mill producte | 545 | 544 | 710 |
| Copper-hese elloy: | | | |
| Sheet snd strip[1] | 162 | 174 | 204 |
| Rod, bar, end wire | 156 | 147 | 204 |
| Tube end pipe | 29 | 29 | 38 |
| Unelloyed copper: | | | |
| Sheet and etrip | 38 | 46 | 60 |
| Rod, bar, end wire[2] | 29 | 26 | 31 |
| Tube and pipe | 131 | 122 | 173 |
| Copper wire mill producte[3] | 653 | 659 | 748 |
| Bare wire[4] | 75 | 77 | 82 |
| Insulsted communication wire | 168 | 179 | 196 |
| Other ineuleted wire | 410 | 403 | 470 |
| Brsss end bronze foundry products[5] | 113 | 109 | 121 |
| Copper-base powder mill products | 9 | 11 | 12 |
| Copper-bsse slloy: | | | |
| Grsnular | 2 | 2 | 1 |
| Flake | (Z) | (Z) | (Z) |
| Unslloyed copper: | | | |
| Grsnular | 6 | 8 | 10 |
| Flake | 1 | 1 | 1 |

Note: Deteil may not edd to totels due to independent rounding. Monthly ehipments dste for brees mills end copper wire mille of primary companiee are eveilehle in Current Induetriel Reporte Series M33K, Inventories of Brees end Copper Wire Mill Shapes.

(Z) Lese then 500,000 pounds.

[1]Militsry smmunition cupe snd diece ere included on net-weigbt besis, i.e., excluding tbe weight of tbe wehhing screp genersted in tbe cupping end discing.

[2]Does not include electricel wire.

[3]Represents copper content weigbt, rather than metel weight.

[4]Represents uninsulsted, bsre, tinned, end/or elloy coated wire.

[5]Source: Buresu of the Census, Current Industriel Reporte Series M33E, Nonferrous Ceetings.

Table 3 COPPER-BASE MILL PRODUCTS, SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION

(Quantity in millions of pounds; value in thousands of dollars)

| Product[1] | Manufacturers' shipments | Exports of domestic merchandise[1 2] | | Estimated producers' value[3] | Percent, exports to manufacturers' shipments (quantity) | Imports for consumption[1 4] | | Apparent consumption[6] (quantity) | Percent, imports to apparent consumption (quantity) |
|---|---|---|---|---|---|---|---|---|---|
| | | Quantity | Value at port | | | Quantity | Value[5] | | |
| FIRST QUARTER 1982 | | | | | | | | | |
| Copper-base mill products[7] | 629 | 38 | 58,761 | 57,204 | 6 | 99 | 111,559 | 690 | 14 |
| Brass mill products: | | | | | | | | | |
| Copper-base alloy: | | | | | | | | | |
| Sheet and strip | 162 | 3 | 10,529 | 10,246 | 2 | 56 | 55,163 | 367 | 15 |
| Rod, bar, and wire | 156 | 4 | 4,891 | 4,759 | 3 | | | | |
| Tube and pipe | 29 | 6 | 11,193 | 10,892 | 21 | 11 | 17,088 | 34 | 32 |
| Unalloyed copper: | | | | | | | | | |
| Sheet and strip | 38 | 1 | 1,259 | 1,225 | 3 | 13 | 15,828 | 63 | 21 |
| Rod, bar, and wire | 29 | 16 | 12,819 | 12,474 | 55 | | | | |
| Tube and pipe | 131 | 3 | 4,186 | 4,073 | 2 | 10 | 12,323 | 138 | 7 |
| Copper wire mill products, bare wire | 75 | 4 | 12,990 | 12,641 | 5 | 8 | 9,940 | 79 | 10 |
| Copper-base powder mill products: | | | | | | | | | |
| Copper-base alloy: | | | | | | | | | |
| Granular | 2 | | | | | | | | |
| Flake | (Z) | 1 | 894 | 894 | 11 | 1 | 1,217 | 9 | 11 |
| Unalloyed copper: | | | | | | | | | |
| Granular | 6 | | | | | | | | |
| Flake | 1 | | | | | | | | |
| FOURTH QUARTER 1981 | | | | | | | | | |
| Copper-base mill products[7] | 632 | 20 | 56,152 | 54,665 | 3 | 83 | 100,160 | 695 | 12 |
| Brass mill products: | | | | | | | | | |
| Copper-base alloy: | | | | | | | | | |
| Sheet and strip | 174 | 2 | 9,266 | 9,017 | 1 | 34 | 35,832 | 349 | 10 |
| Rod, bar, and wire | 147 | 4 | 6,923 | 6,737 | 2 | | | | |
| Tube and pipe | 29 | 3 | 12,252 | 11,922 | 18 | 14 | 21,319 | 40 | 35 |
| Unalloyed copper: | | | | | | | | | |
| Sheet and strip | 46 | 1 | 2,431 | 2,366 | (Z) | 15 | 18,380 | 82 | 18 |
| Rod, bar, and wire | 26 | 4 | 7,188 | 6,995 | 17 | | | | |
| Tube and pipe | 122 | 3 | 5,720 | 5,566 | 3 | 10 | 13,017 | 129 | 8 |
| Copper wire mill products, bare wire | 77 | 3 | 11,517 | 11,207 | 4 | 9 | 10,060 | 83 | 11 |
| Copper-base powder mill products: | | | | | | | | | |
| Copper-base alloy: | | | | | | | | | |
| Granular | 2 | | | | | | | | |
| Flake | (Z) | (Z) | 855 | 855 | 9 | 1 | 1,552 | 12 | 8 |
| Unalloyed copper: | | | | | | | | | |
| Granular | 8 | | | | | | | | |
| Flake | 1 | | | | | | | | |

(Z) Less than half the stated unit of measure.

[1]A comparison of domestic manufacturers' shipments, export, and import codes for copper-base mill products is shown in table 4.

[2]Source: Bureau of the Census report EM-546, U.S. Exports--Schedule B--Commodity by Country.

[3]These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors (0.9731 for industry group 335 relating to brass mill and copper wire mill products and 1.000 for industry group 339 relating to copper-base powder mill products) are based on data for 1980 which are published in Origin of Exports of Manufactured Products, M80(AS)-6, appendix B.

[4]Source: Bureau of the Census report IM 145-X, U.S. Imports for Consumption and General Imports.

[5]Represents the c.i.f. (cost, insurance, and freight) value at the first port of entry in the United States plus U.S. import duties.

[6]Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

[7]This total does not include either insulated wire and cable products or brass bronze foundry products.

Table 4. COMPARISON OF DOMESTIC MANUFACTURERS' SHIPMENTS, EXPORT, AND IMPORT CODES FOR COPPER-BASE MILL PRODUCTS

| Manufscturers' product descriptions (Import/Export descriptions) | Exports of domestic merchandise (Schedule B) | Imports for consumption (TSUSA) |
|---|---|---|
| Copper mill products: | | |
| Copper-base alloy: | | |
| Sheet, strip, and plate (flat) | 612.3360,612.3370,612.3380 | 612.3400,612.3500,612.3600,612.3800,612.3920,612.3940, 612.3960,612.3980,612.4000,612.4100,612.4300.612.4410, |
| Rod, bar, and wire (non-flat)[1] | 612.4620 | 612.4430,612.4510,612.4520,612.5200,612.6100,612.6200, 612.6300,612.6410,612.6420,612.8100.612.8200 |
| Tube and pipe | 613.0520,613.0530 | 613.0600,613.0800,613.1000,613.1100,613.1200 |
| Unalloyed copper: | | |
| Sheet, strip, and plate (flat) | 612.3320 | 612.3000,612.3120,612.3140,612.3160,612.3200, |
| Rod, bar, snd wire (non-flat)[1] | 612.4640 | 612.5000,612.6000,612.8000 |
| Tube and pipe | 613.0540,613.0550 | 613.0200,613.0300,613.0400 |
| Copper wire mill products, bare wire | 612.7420,612.7440 | 612.7000,612.7100,612.7220,612.7240,612.7260,612.7300 |
| Copper base powder mill producta: | | |
| Copper-base alloy: | | |
| Granular | 612.5400 | 612.5500,612.5600 |
| Flake | | |
| Unalloyed copper: | | |
| Granular | | |
| Flake | | |

[1]The import and export codes for this line do not include wire.

## DESCRIPTION OF SURVEY

*Scope of Survey*—This survey covers producers of selected copper controlled materials, i.e., copper-base mill and foundry products.

*Survey Methodology*—The statistics in this publication on copper-base mill products were collected by mail on Bureau of the Census and International Trade Administration Form ITA-9008, Copper Controlled Materials. The survey panel is based on a list of all known producers of copper-base mill shapes and powder products supplied by the Bureau of Industrial Economics (BIE), Department of Commerce. It also includes manufacturers who produce about 95 percent of wire mill products based on studies made by BIE. The data for wire mill products include estimates for small producers in order to represent 100 percent coverage. Approximately 190 companies are included in the mail panel.

Also included in this publication are estimates for foundry products, which are derived from Current Industrial Reports Series M33E, Nonferrous Castings. A description of the methodology for the survey from which these data are derived can be found in the first quarter 1982 publication for this series.

*Reliability of Data*—Survey error may result from several sources: (1) inability to obtain information about all cases in the survey, (2) response errors, (3) definitional difficulties, (4) differences in the interpretation of questions (5) mistakes in recording or coding the data obtained, and (6) other errors of collection, response, coverage, and estimation for missing data. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is due to imputing data for nonrespondents, for late reporters, and for data which fail logic edits. Missing figures are imputed based on quarter-to-quarter movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual quarterly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is not precisely known, but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

*Revisions to Previous Period Data*—Statistics for previous quarters may be revised as the result of corrected data from respondents, including the receipt of late reports for which imputations were made as described above. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

## EXPLANATION OF TERMS

*Shipments*—Shipments include all copper-base mill and foundry product controlled materials. Both products produced by the company which owns the materials and products produced for others under toll agreements are included.

Shipments by brass and bronze foundries include both shipments for sale (to the trade and shipments (production) for own use. Shipments for own use represent copper and copper-base alloy castings for use by the reporting company or by a subsidiary, parent, or other affiliated company. Also included are castings produced and consumed at the same location in the production of finished products.

*Copper-Base Mill Products*—Products produced by rolling, drawing, and extruding copper, brass, bronze, and other copper-base alloy basic shapes. Drawing and insulating of copper wire are also included. Intermediate shapes of powder mill products are included. All other intermediate shapes are excluded. An intermediate shape is any product which has been rolled, drawn, or extruded from refined copper or brass, and which will be rerolled, redrawn, insulated, or further processed into finished brass mill or copper wire mill products (or into another intermediate shape) by other producers of intermediate or finished shapes of copper controlled materials.

*Controlled Materials*—Steel, copper, aluminum, and nickel alloys, either domestic or imported, in the forms and shapes specified in Defense Materials Systems, regulation 1, as revised, whether new, remelted, rerolled, or redrawn.

*Unfilled Order for Sale*—Includes unfilled order for sale to the trade for controlled materials that have been accepted or acknowledged and which have not been shipped.

## COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently and are based on somewhat differing systems of classification. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Aside from the differences in the basic commodity classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above,

there are also the following problems affecting the comparability of the three sets of data.

*Valuation*—There are different methods of valuation for the three types of data:

*Domestic Output*—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

*Exports*—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

*Imports*—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

*Duplication in Quantity and Value of Output*—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

*Estimated Low-Valued Export and Import Transactions*—The import statistics include estimated value data for shipments valued under $251, based on a 1-percent sample. Effective with the statistics for March 1979, the lower limit of the value ranges for estimating data for low-value export shipments has been raised from $251 to $501. For countries other than Canada, effective with the March 1979 statistics, data for shipments valued $501-$999 (formerly $251-$999) are estimated based on a 50-percent sample of such shipments. As in the past, these estimates are combined with data for shipments valued $1,000 and over, which continue to be fully compiled. For Canada, effective with the March 1979 statistics, shipments valued $501-$1,999 ($251-$1,999 prior to March 1979) are estimated, based on a 10-percent sample and are combined with fully compiled data for shipments valued $2,000 and over. For exports to all countries, data for shipments valued under $501 (under $251 prior to March 1979) are also estimated, based on established percentages of individual country totals.

*Manufacturers' Shipments, Not Specified by Kind*—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

*Time Lag Between Output and Exports*—There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

*"Direct" vs "Total" Commodity Exports and Imports*—Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

*Used Commodities*—With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

*Geographic Area of Coverage*—Import and export data reflect the movement of merchandise into and out of the U.S. customs territory (the 50 States, the District of Columbia, and Puerto Rico). They do not include movements between the United States and its possessions. Domestic output (shipments) data exclude Puerto Rico and other outlying areas.

## RELATED REPORTS

An annual Current Industrial Report is published in this series. The annual report summarizes quarterly figures and incorporates known revisions for both current and previous year. It also provides a single reference copy to replace the quarterly publications.

The Bureau of the Census also publishes the following related reports:

| Series | Frequency | Title |
|---|---|---|
| *Current Industrial Reports* | | |
| M33E | Monthly | *Nonferrous Castings* |
| M33K | Monthly | *Inventories of Brass and Copper Wire Mill Shapes* |
| MA-33L | Annual | *Insulated Wire and Cable* |
| *Other Industry Reports* | | |
| M3-1 | Monthly | *Manufacturers' Shipments, Inventories, and Orders* |
| (AS) | Annually | *Annual Survey of Manufactures (ASM)* |
| (MC) | Quin-quennially | *Census of Manufactures* |

| Series | Frequency | Title |
|---|---|---|
| *Foreign Trade Reports* | | |
| EM-546 | Monthly | *U.S. Exports—Schedule B—Commodity by Country* |
| IM-145X | Monthly | *U.S. Imports for Consumption and General Imports* |

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